Professor Tacchini reports to the Paris Academy of Sciences that, "on the 3rd, a small spot (the only one) appeared in the east, and gradually enlarged to 40s., by the 7th continuing of this size (some small spots which presently appeared with it ever changing) till it was near the border on the 13th. On the 14th, when projection and photography revealed hardly a trace of the group, the spectroscope discovered very lively chromospheric flames; higher up, several oblique fragments, evidently from violent eruption, eruption flames on the right, and lastly, a nebulous chromospheric mass, well illuminated and slightly divergent. There was constant commotion of matter."

NOTES AND EXTRACTS.

Prof. R. Wolf communicates to the Quarterly of the German Astronomical Association, (Vol. II, p. 87,) a report on his sun-spot investigations, as follows: "I have continued the observation of the condition of the solar spots (a work begun by me at the end of 1847 in extension of the work of Schwabe and Schmidt, and since then prosecuted uninterruptedly) at least once in every clear day, and very frequently many times and with different telescopes, and have thus obtained, for 270 days of the year 1876, the number g of visible groups and number f of their constituent spots and points, whence I have by the formula $r = k(f + 10g)$ computed the relative number r as first introduced by me in 1850. In this k indicates a certain factor, depending upon the observer and instrument; it is assumed as unity for myself using a magnifying power of 64 applied to a four-foot Fraunhofer refractor, and is for other observers or instruments to be deduced from corresponding series of observations. By supplying the record on days that were cloudy at Zurich from other observations made by Messrs. Weber in Peckeloh, Schmidt in Athens, Denza in Moncalieri, Tacchini in Palermo, I find r equal 11.3 as the mean of all the relative numbers for each day of the year 1876, and in connection with the mean relative numbers of the previous years I have the series:

YEAR	r	YEAR	r	YEAR	r	YEAR	r	YEAR	r
1867	7.3	1869	73.9	1871	111.2	1873	66.3	1875	17.1
1868	37.3	1870	139.1	1872	101.7	1874	44.6	1876	11.3

in which the periodicity of the sun-spot phenomena is clearly shown.

Prof. E. Loomis communicates to the American Journal of Science the following conclusions:

1. Areas of low barometer result from a general movement of the atmosphere towards a central area, and this movement is accompanied by a deflection of the wind to the right, which causes a tendency to circulate around the centre with a motion spirally inward.

2. This deflection to the right, which results from the earth's rotation, causes a diminished pressure within the area of this inward movement, and the pressure is still further diminished by the centrifugal force resulting from the circulation about a centre.

3. The amount of the barometric depression depends upon the force of the wind and the geographical extent of the revolving atmosphere. The effect of centrifugal force is not considerable except when the velocity of the wind approaches that of a hurricane. With a velocity of one hundred miles per hour, the depression due to centrifugal force may amount to about two inches; but in the winter storms of the middle latitudes with a velocity not exceeding 40 miles per hour, the depression due to centrifugal force seldom exceeds one or two-tenths of an inch. In these storms, three-quarters of the observed depression of the barometer is usually the effect of the earth's rotation; but in order that the depression at the centre may amount to as much as one inch, it is generally necessary that this system of circulating winds should prevail over an area nearly 2,000 miles in diameter.

[*To be continued in July Review.*]

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